

## Number of Dice Rolls with Target Sum [\(View\)](#)

You have  $n$  dice and each die has  $k$  faces numbered from 1 to  $k$ .

Given three integers  $n$ ,  $k$ , and  $target$ , return *the number of possible ways (out of the  $k^n$  total ways) to roll the dice so the sum of the face-up numbers equals  $target$* . Since the answer may be too large, return it **modulo**  $10^9 + 7$ .

### Example 1:

**Input:**  $n = 1$ ,  $k = 6$ ,  $target = 3$

**Output:** 1

**Explanation:** You throw one die with 6 faces.

There is only one way to get a sum of 3.

### Example 2:

**Input:**  $n = 2$ ,  $k = 6$ ,  $target = 7$

**Output:** 6

**Explanation:** You throw two dice, each with 6 faces.

There are 6 ways to get a sum of 7: 1+6, 2+5, 3+4, 4+3, 5+2, 6+1.

### Example 3:

**Input:**  $n = 30$ ,  $k = 30$ ,  $target = 500$

**Output:** 222616187

**Explanation:** The answer must be returned modulo  $10^9 + 7$ .

### Constraints:

- $1 \leq n, k \leq 30$
- $1 \leq target \leq 1000$